

REMARKS

Status of the claims

Claims 1-10 and 12 are pending in this application, the independent claims being claims 1, 3 and 12. By this Amendment, claim 12 is amended. Claim 11 previously was cancelled.

Summary of the Official Action

In the Official Action, claims 1-10 were rejected under 35 U.S.C. 112, first paragraph, as failing to satisfy the written description requirement, and claim 12 further was rejected under 35 U.S.C. 112, second paragraph, as indefinite; claim 12 further was rejected under 35 U.S.C. 103(a), as unpatentable over Japanese Patent Publication 2001-305552 (Shuichi) in view of U.S. Patent No. 5,155,612 (Adachi).

Reconsideration and withdrawal of the rejections respectfully are requested in view of the above amendments and the following remarks.

Formal Claim Amendments

The formal rejections under 35 U.S.C. 112, first and second paragraphs, respectfully are traversed. Applicants submit that the claims, written disclosure and drawings satisfy all of the requirements of 35 U.S.C. 112.

Initially, with respect to the rejection under 35 U.S.C. 112, first paragraph, Applicant directs the Examiner's attention to the Fig. 4 and the written description in paragraphs [0019]-[0022] for support and full written description for the feature of a separation surface, as claimed. Specifically, in the exemplary embodiment shown and described therein, the sectional shape of the pole-like spacer includes a head end portion where the buffing cloth comes in contact with the pole-like spacer (contact surface) and a rear end portion where the

rubbing cloth separates from the pole-like spacer (separation surface) in a rubbing direction RD.

Regarding the rejection of claim 12 under 35 U.S.C. 112, second paragraph, Applicant directs the Examiner's attention to Figs. 2, 3 and 11(b), where pole-like spacers 401" are included in a light-shielding film 23.

Nevertheless, without conceding the propriety of the rejections, claim 12 has been amended to recite more clearly that the light-shielding film *includes* pole-like spacers along gaps formed among the pixel electrodes. Support for the amendments may be found in the original application, e.g., in Figs. 2, 3 and 11(b) and the corresponding written disclosure, e.g., at paragraphs [0070] and [0094], where pole-like spacers 401" are included in the light-shielding film 23. No new matter has been added.

Claimed Invention

The present invention relates to a novel electro-optical device. In one aspect, as recited in claim 1, the claimed invention relates to an electro-optical device comprising an electro-optical substance, a pair of substrates holding the electro-optical substance, and pole-like spacers provided on at least one substrate of the pair of substrates, on a to-be-provided surface of the at least one substrate facing the electro-optical substance. Each pole-like spacer has an elongated sectional shape including a rounded initial contact surface and a separation contact surface arranged in a direction of elongation, and at roots thereof, a slope portion with a surface connecting to the to-be-provided surface of the at least one substrate.

In another aspect, as recited in independent claim 3, the claimed invention relates to an electro-optical device comprising an electro-optical substance, a pair of substrates holding the electro-optical substance, pole-like spacers provided on at least one substrate of the pair of substrates, on a to-be-provided surface of the at least one substrate facing the electro-optical substance, and an orientation film formed on the to-be-provided surface of the at least one

substrate. Each pole-like spacer has an elliptic-shaped cross-section including a rounded initial contact surface and a separation surface arranged in a direction of a major axis of the elliptic-shaped cross-section, and at roots thereof, a slope portion with a surface connecting to the to-be-provided surface of the at least one substrate, where the orientation film is rubbed in the direction of the major axis of the elliptic-shaped cross-section.

In another aspect, as recited in independent claim 12, the claimed invention relates to an electro-optical device comprising a TFT array substrate, a counter substrate, pixel electrodes formed on the TFT array substrate, a counter electrode formed on the counter substrate, an electro-optical substance held between the TFT array substrate and the counter substrate, and a light-shielding film formed between the counter substrate and the counter electrode, where the light-shielding film includes pole-like spacers that are arranged along gaps among the pixel electrodes.

Prior Art Distinguished

Applicants submit that the prior art fails to anticipate the claimed invention. Moreover, Applicants submit that there are differences between the subject matter sought to be patented and the prior art, such that the subject matter taken as a whole would not have been obvious to one of ordinary skill in the art at the time the invention was made.

The Shuichi JP '552 reference relates to a liquid crystal device and its manufacturing method, and discloses a liquid crystal device including pillar-shaped spacers. However, Applicants submit that the Shuichi JP '552 reference fails to disclose or suggest at least the above-discussed features of the claimed invention. Initially, as acknowledged by the Examiner, the Shuichi JP '552 reference fails to disclose or suggest the feature of a pole-like spacer having, at roots thereof, a slope portion with a surface connecting to the to-be-provided surface. The Shuichi JP '552 reference illustrates in Fig. 10 and describes in the corresponding text at paragraph [0062] various pillar-shaped spacers including at least a

leading contact surface having an acute- (e.g., sharp-) angled point of contact. Nowhere does the Shuichi JP '552 reference disclose or suggest a pole-like spacer having an elongated sectional shape or an elliptic-shaped cross-section including a rounded initial contact surface and separation surface in a direction of elongation (e.g., the direction of the major axis of the elliptic-shaped cross-section), as disclosed in the present application and recited in independent claims 1 and 3.

Also, as acknowledged by the Examiner, the Shuichi JP '552 reference fails to disclose or suggest the feature of a light-shielding film formed between the counter substrate and the counter electrode. Further, Applicants submit that the Shuichi JP '552 patent fails to disclose or suggest at least the feature of a light-shielding film including pole-like spacers along gaps among the pixel electrodes.

The Adachi '612 patent relates to a liquid crystal display device with a light shield, and is cited for its alleged disclosure of a light-shielding film formed between the counter substrate and the counter electrode. Without conceding the propriety of the Examiner's characterization of the Adachi '612 patent, Applicants submit that the Adachi '612 patent fails to disclose or suggest at least the above-discussed features of the claimed invention. In particular, nowhere is the Adachi '612 patent understood to disclose or suggest at least the feature of a light-shielding film including pole-like spacers along gaps among the pixel electrodes, as disclosed in the present application and recited in claim 12. Nor is the Adachi '612 patent believed to add anything to the above-discussed prior art that would make obvious the claimed invention.

Applicants have reviewed the remaining art of record and submit that the prior art fails to disclose or suggest the above-discussed features or otherwise remedy the deficiencies of the cited art.

For the above reasons, Applicants submit that claims 1, 3 and 12 are allowable over the cited art.

Claims 2 and 4-10 depend from claims 1 and 3, respectively, and are believed allowable for the same reasons. Moreover, each of these dependent claims recites additional features in combination with the features of its respective base claim and is believed allowable in its own right. Individual consideration of the dependent claims respectfully is requested.

Entry Under 37 C.F.R. 1.116

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration (as the amendments merely amplify issues previously discussed throughout prosecution); (c) satisfy a requirement of form asserted in the previous Office Action; (d) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (e) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

Conclusion

Applicants believe that the present Amendment is responsive to each of the points raised by the Examiner in the Official Action, and submit that the Application is in condition for allowance. Favorable consideration of the claims and passage to issue of the present application at the Examiner's earliest convenience earnestly are solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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Date: June 12, 2006

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